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On the ants (Hymenoptera: Formicidae) of the Philippine Islands: III. The genus *Recurvidris* BOLTON 1992

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A b s t r a c t : A new species of the myrmicine ant genus *Recurvidris* BOLTON 1992 is described from Negros Island, the Philippines. *Recurvidris nigrans* nov.sp. belongs to the *R. kemneri* species group and can be easily distinguished from all congeners by its dark body colour. *Recurvidris nigrans* nov.sp. is the first species record of *Recurvidris* from the Philippines, but a second unnamed species of the genus has been reported from southern Luzon in the world wide web.

K e y w o r d s : ants, Formicidae, *Recurvidris*, new species, Philippines.

Introduction

Species of *Recurvidris* BOLTON 1992 are rarely collected, they are small and very slender myrmicine ants with characteristic anteriad curved propodeal spines (Figs 1, 2). Other important characters to recognize the genus are: palp formula 4, 3; antenna 11-segmented (Fig. 3); mandibles with 4-5 teeth and oblique apical margin (Fig. 4); mesonotum posteriorly with unpaired seta; propodeal spiracles small and situated far dorsally; meta-peurial lobes reduced; petiole low and pedunculate (Fig. 1); postpetiole low and with deep helcium; first gastral segment (Figs 1, 2) dorsoventrally depressed, the tergite almost flat (BOLTON 1992, 1994).

BOLTON (1992) erected the replacement name *Recurvidris* (for *Trigonogaster* FOREL 1890), listed 20 morphological characteristics for the genus, revised the seven species known at that time, and classified them into two species groups (*R. kemneri* and *R. recurvispinosa* group). The systematic position of *Recurvidris* shifted within Myrmicinae from Pheidologetonini (FOREL 1917, EMERY 1922) to Solenopsidini (WHEELER 1922), to incertae sedis (ETTERSHANK 1966, BOLTON 1992), and recently to Crematogastrini (BOLTON 2003).

The genus presently contains ten described species (BOLTON 1992, XU & ZHENG 1995, ZHOU 2000, and this study) and is distributed chiefly in the Oriental Realm, from Sri Lanka and India eastwards till Weber's Line and northwards to the Himalayas, southern China and the most southern islands of Japan (BOLTON 1992, XU & ZHENG 1995, ZHOU 2000).

There are no literature records of *Recurvidris* from the Philippine archipelago. However, an unidentified *Recurvidris* species has been recorded from southern Luzon in the world

wide web (ALPERT & al. 2008). Specimens of this species were not studied. The structural characteristics, the small size, and the yellow colour of the specimen photographed in ALPERT & al. (2008) show that at least two *Recurvidris* species inhabit the Philippines.

Material and methods

Specimens are dry mounted on card squares or triangles. Examination of specimens was carried out with a Leica Wild M10 binocular microscope; measurements were taken at magnifications of 80× and 128×. Digital photographs were taken with a Leica DFC490 camera attached to a Leica MZ16 binocular microscope with the help of Image Manager IM50 and processed with Auto-Montage Pro and Adobe Photoshop 7.0 programmes.

Terminology and method of description follow BOLTON (1992), measurements and indices subsequently follow BOLTON (1987). All measurements are in millimetres; with the minimum and maximum values presented for paratypes.

Measurements and indices (after BOLTON 1987):

- TL Total Length. Total outstretched length of ant from mandibular apex to gastral apex.
- HL Head Length. Length of head proper, excluding mandibles, measured in straight line from mid-point of anterior clypeal margin to mid-point of occipital margin.
- HW Head Width. Maximum width of head, in full-face view measured behind eyes (excluding eyes).
- CI Cephalic Index. $HW/HL \times 100$
- SL Scape Length. Maximum straight line length of antennal scape excluding basal constriction or neck close to condylar bulb.
- SI Scape index. $SL/HW \times 100$
- PW Pronotal Width. Maximum width of pronotum in dorsal view.
- AL Alitrunk Length. Diagonal length of alitrunk in profile, from the point at which the pronotum meets the cervical shield to posterior base of metapleuron.

Recurvidris nigrans nov.sp.

E t y m o l o g y : The Latin adjective "nigrans" means dark and refers to the dark body colour of the new species that differs from all other hitherto known congeners.

T y p e m a t e r i a l : Holotype worker labelled "Philippines: Negros Or., Cuenos de Negros, Valencia\ Apolong, Casaroro Falls, 28.1.2007, leg. H. Zettel (456)", in the Entomological Collection of the University of San Carlos, Cebu City, Philippines. 10 paratype workers labelled "Philippines: Negros Oriental\ Cuernos d.N., Valencia\ Apolong, Casaroro Falls\ 3-4.3.2008, lg. Zettel (513)" in the Natural History Museum Vienna, Austria, and in the author's collection.

T y p e l o c a l i t y : Philippines, Negros Island, Negros Oriental Province, Cuernos de Negros Mountains (= Mount Talinis), municipality of Valencia, barangay Apolong, Casaroro Falls; 9° 16' N, 123° 12' E, c. 500-550 m a.s.l. (GPS).

D i a g n o s i s (worker): Body chiefly blackish brown, funiculus of antenna and tarsi yellowish. Body surface smooth and shiny. Head broad, HW 0.61-0.65, CI 99-103. Cly-

peus without distinct carinae. Mandible with four acute teeth on apical margin and one prominent, acute tooth at basal margin (Fig. 4). Propodeum dorsally with 1-2 pairs of short decumbent setae, with long, slender, recurved spines (Fig. 1), without infradental lamellae between spines and metapleural lobes. Petiole (Fig. 1) with very slender peduncle ventrally bearing a spiniform subpetiolar process; node in lateral view forming an acute angle anteriorly (at insertion of anterior setae).

Description (worker):

Measurements of holotype: TL 3.2; HL 0.63; HW 0.65; CI 103; SL 0.57; SI 89; PW 0.35; AL 0.86. Measurements of paratypes (n = 10): TL 2.9-3.2; HL 0.61-0.64; HW 0.61-0.65; CI 99-102; SL 0.56-0.59; SI 89-94; PW 0.34-0.35; AL 0.81-0.86.

Head (Figs 2, 3) broad and smooth, lacking sculpture except hair pits, setiferous pits and some rugae near mandible base. Mandible (Fig. 4) smooth and shiny, with some relatively large hair pits, apical margin with four teeth, forth tooth acute, basal margin with one acute tooth almost as large as forth tooth of apical margin. Clypeus (Fig. 4) without paired carinae, but with indistinct paired elongate swellings. Eyes (Fig. 1) comparatively large, containing 8 ommatidia in longest row. Profile shape of alitrunk, petiole and postpetiole as in Figure 1. Alitrunk smooth and polished, with some very fine setiferous pits, only part of mesopleuron with some fine rugae. Promesonotum with 4 pairs of setae plus one median seta posteriorly. Impression behind mesonotum appearing angular in profile. Propodeum comparatively high, dorsal surface with 1-2 pairs of short subcumbent setae in front of spiracle; spines very high, slender, divergent, and in caudal view very narrow (blade-like). Petiole (Fig. 1) with 2-3 pairs of dorsal setae; peduncle in profile long and very slender, its dorsal outline distinctly concave and ending posteriorly in a sharp angle at insertions of anterior pair of setae (insertions separated from each other by shallow impression), its ventral outline with long, spiniform subpetiolar process; node low. Postpetiole with 3 dorsal pairs and 1 ventrolateral pair of setae, low and with deep helcium, as typical for the genus. Gaster moderately depressed. Petiole, postpetiole, and gaster polished except for very fine setiferous pits. Colour blackish brown, alitrunk, petiole and postpetiole slightly lighter. Scape of antenna brown, funiculus yellowish. Mandibles brown, distally yellowish. Legs dark brown, but tarsi yellowish.

Comparative notes: *Recurvidris nigrans* nov.sp. meets all morphological criteria of the *R. kemneri* group listed by BOLTON (1992), i.e., the characteristic dentition of the mandible (Fig. 4), the absence of infradental lamellae on the propodeal declivity, and a broad head (Fig. 2) (range of CI 94-106 in the group, 99-103 in *R. nigrans* nov.sp.). This species group contains only two further taxa, *R. kemneri* (WHEELER & WHEELER 1954) from Borneo and Java and *R. proles* BOLTON 1992 from Sulawesi. Comparing the key characteristics which distinguish these two species, *R. nigrans* sp. nov. is more similar to *R. proles*, because it is relatively large in size, lacks clypeal carinae and bears 1-2 pairs of setae on the propodeal dorsum. The dark body colour of *R. nigrans* nov.sp. differs from both species (as well as from all other congeners!); *R. kemneri* is uniformly yellow, *R. proles* is yellow with brown head and gaster. Further differences between *R. nigrans* nov.sp. and *R. proles* are the following: The tooth on the basal margin of the mandible is strongly developed in *R. nigrans* nov.sp. (almost as large as the forth tooth, Fig. 4), but small in *R. proles*. The dorsum of the propodeum bears short, decumbent setae in *R. nigrans* nov.sp., but comparatively long standing setae in *R. proles*. The subpetiolar process is narrow, relatively long and acute in *R. nigrans* nov.sp.

(Fig. 1), but small and triangular in *R. proles* (for the latter two characteristics see BOLTON 1992: fig. 8). "*Recurvidris* sp_phil" from Camarines Sur in southern Luzon (ALPERT & al. 2008: see figures) differs from the new species by much smaller size (TL c. 2.1, HW c. 0.4), uniformly yellow colour, and a relatively stout petiolar peduncle in lateral aspect. On average, *R. nigrans* nov.sp. is the largest known species of *Recurvidris*.

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Zusammenfassung

Eine neue Art der Myrmicinengattung *Recurvidris* BOLTON 1992 wird von der philippinischen Insel Negros beschrieben. *Recurvidris nigrans* nov.sp. gehört zur *R. kemneri*-Artengruppe und kann von allen übrigen Arten der Gattung unter anderem einfach durch die dunkle Körperfärbung unterschieden werden. Die neue Spezies repräsentiert den ersten Nachweis einer *Recurvidris*-Art von den Philippinen, aber eine zweite, nicht identifizierte Art wurde im World Wide Web aus dem Süden der Insel Luzon gemeldet.

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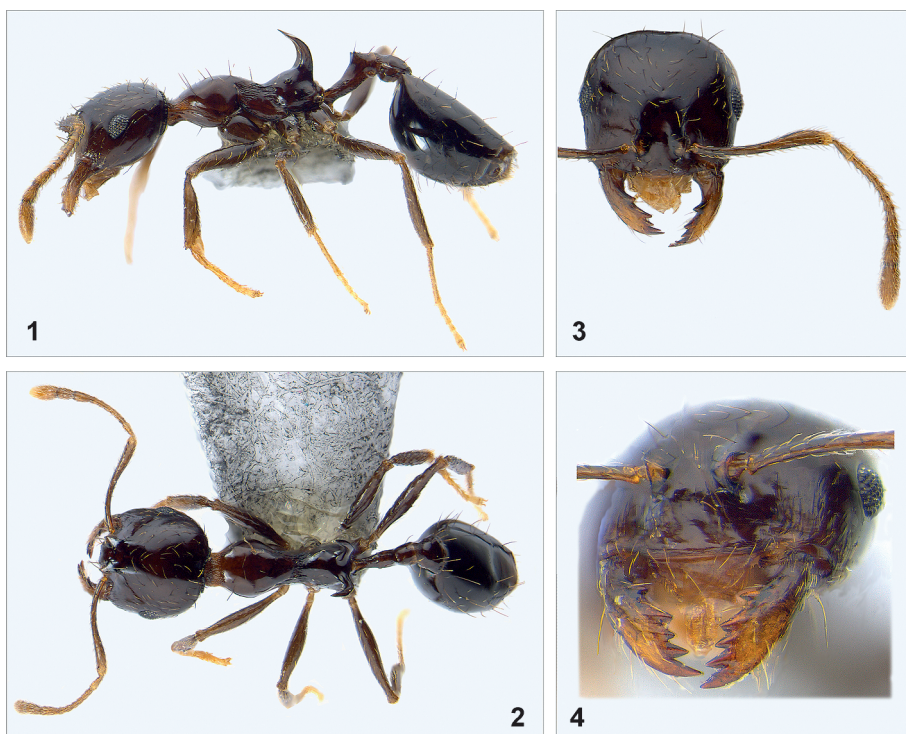
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Figs 1-4: *Recurvidris nigrans* nov.sp., paratype worker (HW 0.63 mm, AL 0.82 mm) in the Natural History Museum Vienna. (1) Habitus, lateral view; (2) Habitus, dorsal view; (3) Head, full face view; (4) Head in oblique view showing dentition of mandibles.